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Need for National Artificial Intelligence Strategy for Pakistan

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Key Points:

- The criss-cross of global competition for Artificial Intelligence (AI) among the great powers and major countries has triggered a wave of excelling in the AI technologies
- In recent years, many countries have formulated their national Artificial Intelligence (AI) strategies and are implementing them in order to remain relevant in economic and security affairs.
- Pakistan has already missed the industrial and information revolutions and cannot afford to miss this AI revolution. AI technologies are decisive and deterministic for its economic progress as well as for its security.

In the pages of history, one of the ignored and neglected dimensions of modernisation, progress, development, and evolution has been the technological advancement. The word “technological advancement” has witnessed the constructive as well as destructive aspects of individuals in general and polities in particular.¹ In other words, the progression, advancement, and development have largely been dependent upon the very notion of technological advancement. All the major fronts of national power like economic, military, security, polity, and others evolved only because of technological advancement. To put this into perspective, the lifeline of modernisation and progression comes under the

umbrella of technological advancement.² In retrospect, besides present, we have been witnessing the quantitative era of technological advancement, which in current times is transforming into qualitative or cognitive stage with exponential multitudes of autonomy.³ Arguably, the notion of autonomy is vague and debatable to the extent of its absoluteness or partialness; but even if the absoluteness of cognitive aspect remained partial, it is going to change the rules of game in every form and in every dimension.⁴

The criss-cross of global competition for Artificial Intelligence (AI) among the great powers and major countries has triggered a wave of excelling in the AI technologies.⁵ Almost all the great leaders as well as policymakers are emphasising the importance of AI in the contemporary era and times ahead. Recently, Russian

¹ M. L. Cummings, “Artificial Intelligence and Future of Warfare,” in *Artificial Intelligence and International Affairs: Disruption Anticipated*, Chatham House, last modified June 2018, pgs. 7-18, <https://www.chathamhouse.org/sites/default/files/publications/research/2018-06-14-artificial-intelligence-international-affairs-cummings-roff-cukier-parakilas-bryce.pdf>.

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² Olaf J. Groth, Mark Nitzberg, Principal and Dan Zehr, “Comparison of National Strategies to Promote Artificial Intelligence,” *Konrad Adenauer Stiftung*, last modified 2019,

³ Ibid.

⁴ Ibid.

⁵ M. L. Cummings, “Artificial Intelligence and Future of Warfare,”

President Vladimir Putin⁶ remarked that whoever has dominance in the field of AI will be the next super power. Similar remarks were made by other leaders like Chinese President Xi Jinping, US President Donald Trump, German Chancellor Angela Merkel, Iranian President Hassan Rouhani, and Malaysian Prime Minister Dr Mahathir Mohamad in different contexts and times.⁷

Stephen Hawking was alarmed that the grave consequences of AI could bring the whole humanity to the brink of a catastrophe. Prominent scholars like Nick Bostrom, Yuval Noah Harari, Michael C. Horowitz and

been enjoying the fruits of technological advancement have launched their national AI strategies. On the other hand, countries with weak technological advancement are trying or at least taking into account the significance of AI in the current age.

In South Asia, India took the lead in launching its National Artificial Intelligence Strategy (NAIS) in the mid of 2018.¹¹ As mentioned above, these countries are going to embrace the qualitative or cognitive stage of technological advancement and hence are entering the ultimate advance phase of human history that would have the exponential potential for future progression.

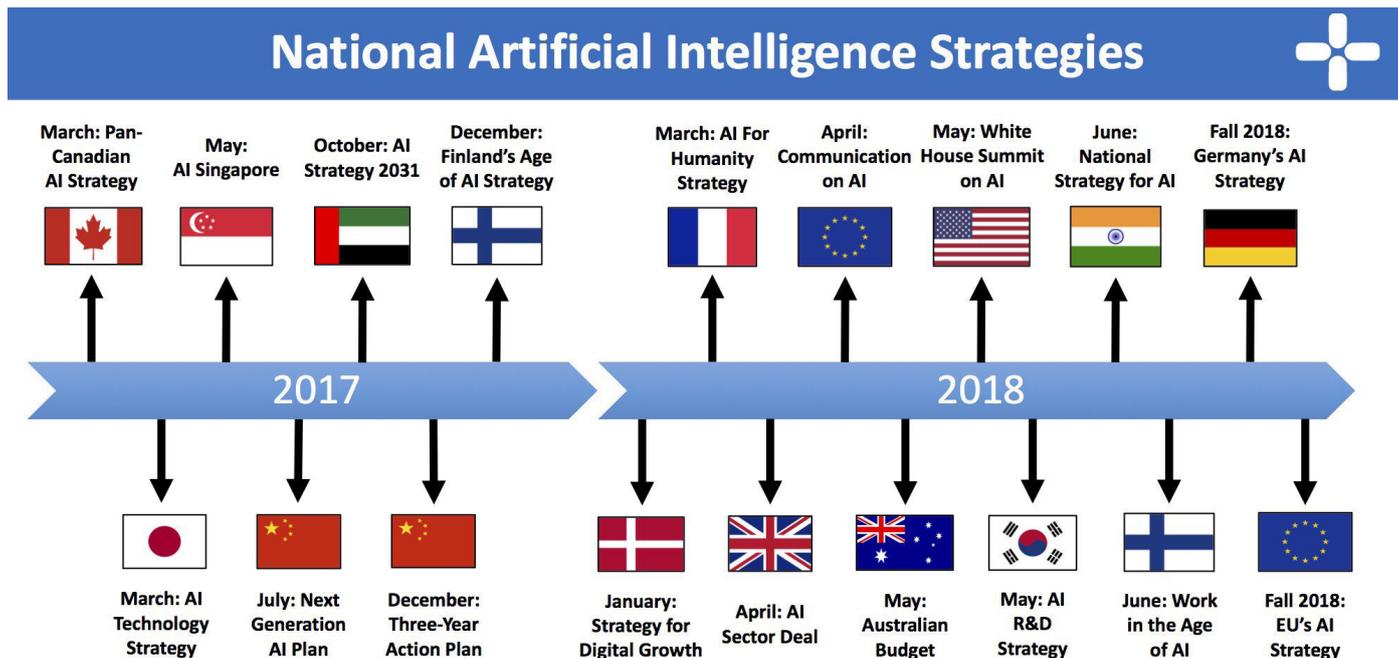


Figure 1 A Snapshot of Countries having their national AI strategies (Source: AI Trends)

many others are trying to unfold the importance and spill overs of AI in negative as well as positive terms.⁸ In this atmosphere, there is heavy and transitional contestation among the major countries to connect and to readjust their major dimensions of national power with AI. For this purpose, many countries have launched their national AI strategies in order to remain relevant with time and space of international relations.⁹ In this regard, the prominent countries are Australia, Canada, China, Germany, France, Russia, Singapore, South Africa, South Korea, United States, and United Kingdom.¹⁰

It is pertinent to note that the countries which have

⁶ Olaf J. Groth, Mark Nitzberg, Principal and Dan Zehr, "Comparison of National Strategies to Promote Artificial Intelligence,"

⁷ Ibid.

⁸ Ibid.

⁹ "Artificial Intelligence for Europe," European Commission, last modified April 25, 2018.

¹⁰ Ibid.

Given the significance of national AI strategies, the aspects and potential for progression is of strategic consideration on all fronts of national power including economic, security, governance, and others. In the given context, it is important to have a careful estimate of progression in different spheres of national power.

The foremost front of national AI strategies is economics. The history of economic growth has been unleashed by the means of technological apparatus. From hunting to agriculture stage, from agricultural nature to industrial stage; from industrial stage to the information age, and from information age to the age of AI; the engine of all economic progression has unilaterally been dependent on the notion of technological advancement. The production and production capabilities have been multiplied in every stage in terms of technological advancement. It should be remembered in cogent

¹¹ Tim Dutton, "An Overview of National AI Strategies," *Politics+AI on Medium*, last modified June 29, 2018, <https://medium.com/politics-ai/an-overview-of-national-ai-strategies-2a70ec6edfd>.

manner that humans have been an equal part of this equation up until the age of AI. But with the advent of AI, this equation is going to be disproportionate in terms of human-technology relations. At the same time, it has enormous potential for disproportionate economic spill over in context of multiplicity of economic progression compared to previous ones.

The multiplicity of exponential power factor regarding economic progression is going to be driven by autonomous or semi-autonomous machines and robots. The ontology of this transition is that automatic machines and automation are about to become the agents of the past and autonomy and autonomous machines are to be the agents of the future. It is an established principle of evolution that autonomy invites exponential-multiplicity of progression. When means (technology) becomes autonomous, progression becomes exponential. In this context, economic progression of technologically advanced countries is principally aimed at achieving exponential growth. Therefore, economic component of national AI strategies of countries is going to be decisive for their future. The journey of machines is successfully achieving autonomous features after the automated phase. This kind of remarkable achievement has not been accomplished in the entire history of economics, manufacturing, production forces, trade, commerce, and GDP growth. Even at the semi-autonomous stage, AI is transforming geo-economics with an exponential speed.

It is being predicted that by 2030, AI will contribute \$15.7 trillion to the global GDP.¹² Out of \$15.7 trillion, China alone will get \$7 trillion, which is nearly 45% of total AI contribution to the world GDP.¹³ The shares of North America, Northern Europe, and Latin America will be \$3.7 trillion, \$1.8 trillion, and \$0.5 trillion respectively, which will accumulate to 38 of the total world GDP.¹⁴ The share of developed Asia (East Asian countries having advance technology like China, Japan, South Korea etc.) will be \$0.9 trillion and the rest of the world will contribute \$1.2 trillion, which is about eight per cent of the world GDP.¹⁵ The magnitude of AI contribution to the world GDP by 2030 can be assessed from the fact that it would be roughly 13 times equivalent to Australia's GDP.

On the other hand, the impact of AI on specific industries will account for \$14 trillion Gross Value Added by 2035.¹⁶ There are four major sectors, which are most likely to

¹² Jeff Desjardins, "AI will have an enormous impact on the future economy," *Business Insider*, last modified August 23, 2017, <https://www.businessinsider.com/infographic-ai-effect-on-economy-2017-8>.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Jeff Desjardins, "AI will have an enormous impact on the future economy,"

contribute greater and faster due to AI - manufacturing sector, professional services, financial services, and wholesale and retail. Their collective contribution is predicted to be about \$34.5 trillion due to AI features. The manufacturing sector is similarly expected to contribute \$12.2 trillion, professional services \$9.3 trillion, wholesale and retail \$8.4 trillion, and financial services \$4.6 trillion.¹⁷

Now, calculate the situation of South Asian countries and the pendulum is clearly leaning towards Indian side because of its technological advancement as compared to rest of the South Asian countries including Pakistan. This is for sure an alarming situation, most critical condition, and deterministic time for Pakistan as if it loses this AI contest; it would be perhaps left light years behind as compared to aforementioned countries.

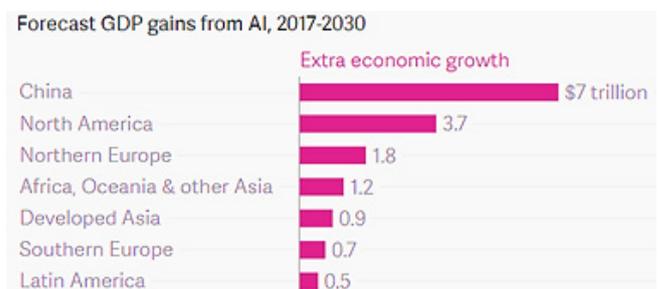


Figure 2 Forecast GDP gains from AI, 2017-2030, (Source: AI Trends)

Another critical front of national power is security or military technology. Military technology has remained a pivotal factor in every arena of hard power. The quantitative era of military technology has almost reached its pinnacle and now it is transforming into qualitative era of military technology. Almost every technology in the military affairs is going to be autonomous or semi-autonomous due to AI technologies, which is a critically alarming situation for the security of countries, because AI arms race has begun and is rapidly advancing towards the era of killer robots, unmanned vehicles and cyborgs (a mechanised human body).¹⁸ The level and extent of autonomous weaponry is engulfing the entire landscape of securitisation. All the fronts of warfare including air, land, naval, asymmetric, and cyber are becoming peripheries of AI weaponry. The traditional weaponry is either going to be incorporated by AI technologies or is going to become a relic of the past. The notions of balance of power, security, stability, and peace are in a danger-zone. Topmost countries of AI race are US, China, Israel, and Russia, but other countries like India are setting their stage for AI weaponry in order to

¹⁷ Ibid.

¹⁸ P. W. Singer, *Wired for War: The Robotics Revolution and Conflict in the Twenty-First Century* (New York: The Penguin Press, 2009).

remain relevant in the field of military technology. What does it mean? Nothing, but vertical and perpendicular erosion of balance of power in South Asian region. Deterrence and cross-sectional deterrence are going to be subservient to AI weaponry. In reiterating terms, Pakistan cannot afford the situation, which could largely lean the pendulum of hard-power towards India in context of AI weaponry. This could not only become the worst situation for Pakistan in the presence of the Modi-led BJP government, but also for the regional and global peace and security. Therefore, balance of power of AI weaponry is necessary for South Asian security and stability.

Key Guidelines for Pakistan's NAIS

From the above context, it is necessary for Pakistan to have a comprehensive NAIS in the given circumstances. In this regard, the NAIS of Pakistan should be a multi-pronged policy having strategic approach towards NAIS.

Firstly, research and development in the field of AI technologies should be the foundational objective of national AI strategy of the country. Currently, we are far behind in AI technologies specifically in the field of research and development. Although some individual personalities are taking interest and initiatives like Presidential Initiative for Artificial Intelligence & Computing and National University of Science and Technology's National Centre of Artificial Intelligence but there is no organised policy and road map regarding holistic research and development.

Secondly, the development of our AI technologies should be the topmost objective of our NAIS. For decades, we have been only users of products of advance technology. Besides having an agrarian economy, we have been unable to come up with our own technological products like tractors and other machines. As mentioned above, unfortunately we did not catch up with industrial age and information age, and if we miss the AI age, it will have grave consequences for our already crippling economy and also for security.

Thirdly, policymakers must consider and materialise fetching of AI technologies from friendly countries like China. Indeed, no country is willing to give its technology but here comes the art of securing national interests. In the era of interdependence, we should bargain with careful calculations. By playing our cards rightly and strategically, the objectives can be materialised to considerable extent. It is pertinent to mention here that by focusing on developing our own AI technologies and fetching some AI technologies from friendly countries will have huge impact on our economy and security.

Lastly, establishment of a centralised institute aimed at ensuring coordination, cooperation, and implementation of aforementioned objectives with strict checks and balances is necessary.

Conclusion

The aforementioned investigation of economic and security landscapes under the light of national AI strategies of various countries in general and of India in particular strongly suggest that Pakistan must turn its focus towards the emerging technologies specifically AI technologies and formulate its national AI strategy as soon as possible in order to remain relevant in economics and security. The sensitivity of time is the most significant factor for Pakistan because it already missed the industrial and information ages and is resultantly facing increasingly downtrodden economic situation. The only field of national power of Pakistan, which makes it relevant in the region and to the globe, is its nuclear capability. This capability is not enough to remain relevant in power politics because AI weaponry is changing the rules of the game and the fundamental preconditions of this new game is to become self-sufficient in AI technologies. The realistic lesson of the history is self-help and survival in this anarchic international system. The only option of self-help in this context is to embrace AI technologies. The miracles of progression, either in economics or in security, now lie under the umbrella of NAIS.